

January 29, 2010

LSA Document #08-764 (Antidegradation)  
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**Re: Comments on LSA Document #08-764, Antidegradation Standards and Implementation Procedures**

**INTRODUCTION**

On December 16, 2009, the Indiana Department of Environmental Management ("IDEM") published a second notice draft rule concerning antidegradation standards and implementation procedures ("Proposed Rule"). The notice indicated that comments must be provided to IDEM by January 30, 2010.

The Proposed Rule contains a number of revisions to the current Indiana water quality standards rules. Some of these revisions will result in more frequent issuance of permit limits, more stringent permit limits, significant changes in facility operations, and restrictions or even prohibitions on new and increased discharges. These changes will lead to enormous additional compliance costs, increases in taxes for Indiana residents and businesses, and adverse impacts on economic growth and employment in the State. Despite these significant impacts, we believe that there will be little environmental benefit from some of the new requirements. Therefore, we urge IDEM and the Board to consider, for each proposed regulatory change, whether the change is truly necessary and whether its benefits justify the resulting social and economic impacts.

We have attempted to perform a careful evaluation of each significant provision in the Proposed Rule. Based on that evaluation, these comments provide recommendations as to how the Proposed Rule should be revised before adoption by the Board. Where possible, we have tried to offer constructive suggestions as to how the Proposed Rule should be changed to address the legal, technical and policy concerns that we have raised. We urge IDEM and the Indiana Water Pollution Control Board ("Board") to seriously consider these recommendations as they move forward with this rulemaking.

## **ANTIDEGRADATION REQUIREMENTS**

As part of the Proposed Rule, IDEM has included an extensive set of provisions that impose requirements on dischargers to waters that already have water quality that is better than applicable water quality standards, and impose additional requirements on dischargers to waters that have significant resource value. The Proposed Rule would have substantial adverse social and economic impacts, due to requirements that have no sound scientific basis. Moreover, the scope of the antidegradation rules is overly broad, and the antidegradation review process requires IDEM to make determinations concerning complicated social and economic factors, for which the agency is ill-equipped. As a result, implementation of the Proposed Rule has the potential to create substantial additional delays in the processing of permit applications and requests for permit modifications. These concerns are discussed in detail below, along with suggested changes that would ameliorate those impacts while still protecting the quality of Indiana's waters.

### **I. GENERAL COMMENTS**

#### **A. The Proposed Rule Imposes Requirements Beyond Those Needed To Meet Water Quality Standards.**

As an initial matter, it is important to note one critical fact: antidegradation concerns waters that have water quality better than applicable water quality standards. For these waters, IDEM will impose additional requirements because the water constitutes an important resource that, for policy reasons, is deemed worthy of special protection. This is a policy judgment, not an environmental protection judgment, because water quality already is sufficiently protected by water quality standards. In making that policy judgment, IDEM and the Board must take a broad range of factors into account, including the adverse social and economic impacts from imposition of onerous antidegradation requirements.

#### **B. Certain Provisions in the Proposed Rule Should Be Clarified.**

IDEM should clarify the Proposed Rule in order to make antidegradation requirements easier for permit applicants to understand and for IDEM to implement. Specifically, the regulations more clearly should spell out: (1) when an applicant seeking permission for an increase in its discharge must submit an antidegradation demonstration; (2) the required content for such a demonstration; and (3) the legal standard by which the adequacy of the demonstration will be evaluated and any increase allowed. Clear regulations would provide a much-needed guide and certainty for industry, the public and IDEM.

Antidegradation review can be time-consuming and expensive. Such review also can introduce a substantial element of uncertainty into business planning and prediction as to what the outcome will be. Therefore, the Proposed Rule also should contain (1) an applicability

provision that uses a bright line trigger that necessitates a new or modified NPDES permit; and (2) a provision pertaining to the time for IDEM's rejection or approval of exemption applications. Those in the regulated community should be informed as quickly as possible whether IDEM accepts or rejects an exemption application, and need the certainty of knowing that there is a clear time period by which they can expect such a determination.

In addition, it is possible that those in the regulated community may encounter situations in which they will have a temporary increase due to maintenance issues or the installation of new equipment, which cause discharges within existing capacity and pursuant to an approved operation within the context of their permit. Requiring permittees to obtain confirmation from IDEM to be sure they are not triggering antidegradation review in such cases would be unduly burdensome for both the agency and the permittee. Similarly, there may be cases in which a permittee may have other types of short term, emergency use needs. We suggest that the Proposed Rule contain a provision to address this issue, in which the permittee may notify IDEM by telephone and provide the relevant information, with a follow-up written notification within five (5) business days.

Moreover, there is no clear provision in the Proposed Rule concerning projects already reviewed under the current antidegradation rule. For example, if a project has been reviewed and complies with the current antidegradation requirements, IDEM should not review it again under the Proposed Rule, even if that project has not been completed as of the date that the Proposed Rule is finalized. The Proposed Rule should be revised to include language that clarifies that projects reviewed under the old rule are not subject to a reopener once the Proposed Rule becomes effective.

## **II. 327 IAC 2-1.3-6: TRIGGER FOR ANTIDEGRADATION DEMONSTRATION**

The Proposed Rule includes a trigger to conduct an antidegradation review when there is a new or increased loading of a pollutant of concern that results in "significant lowering of water quality" in the receiving water body. See Proposed Rule at § 2-1.3-6(a). There are some proposed discharges that will result in an increased loading of a pollutant of concern although there is no need for a new or modified NPDES permit limit. This approach should be modified so that an antidegradation review is required only when a new or increased discharge triggers the need for a new or modified NPDES permit limit and involves a significant lowering of water quality above a specified de minimis threshold.

The current regulatory approach should be maintained, so that an antidegradation review is required when a new or increased discharge triggers the need for a new or modified NPDES permit limit due to a significant lowering of water quality above a de minimis allowance. The de minimis aspect below which antidegradation procedures do not apply should be kept as part of the applicability section. Using new or increased permit limits as the trigger clearly allows

facilities to continue their normal operational practices, which frequently rely on a significant margin of safety to ensure that normal operational variability does not result in permit violations. If IDEM does not revise the Proposed Rule to maintain this trigger for antidegradation review, the Proposed Rule should be revised to clarify that incursions into normal operational safety margins due to anticipated variability and other routine increases should not trigger review.

In addition, there currently is no description of the baseline year that the company is to use to assess the increases below de minimis, and no description of (1) how this would be tracked, and (2) who would be responsible for tracking it. In its response to Comments on the First Notice of Proposed Rulemaking, IDEM alluded to the notion that the unused loading capacity as of the date of the first request would be the baseline. See Summary Response to Comments from the First Notice Period at 15-16.

### **III. 327 IAC 2-1.3-2: DEFINITIONS**

#### **A. Applicability of Definitions**

This section states that the definitions apply throughout draft new rule 327 IAC 2-1.3, and to 327 IAC 2-1 (water quality standards for waters outside the Great Lakes system), and 327 IAC 2-1.5 (water quality standards for Great Lakes system waters). However, both 327 IAC 2-1 and 327 IAC 2-1.5 contain a set of definitions, and many of the definitions in this section are duplicative of those definitions. Therefore, the definitions in this section should apply only to Proposed Rule 327 IAC 2-1.3.

#### **B. (9) "CERCLA"**

This definition identifies the federal statute by providing a code citation (42 U.S.C. 9601 to 9675) and amendment date (October 11, 1996). CERCLA has been amended since October 11, 1996. The Proposed Rule should be updated to reflect more recent amendments.

#### **C. (10) "Clean Water Act" or "CWA"**

This definition identifies the federal statute by providing a code citation (33 U.S.C. 1251 *et seq.*) and amendment date (October 11, 1996). The CWA has been amended since October 11, 1996. The Proposed Rule should be updated to reflect more recent amendments.

#### **D. (13) "Community"**

This definition provides that "community" means "a general collective term to describe the varieties of aquatic species and associated organisms living together in a waterbody." That definition applies to the use of the term in several provisions of the rule. However, the definition does not apply to how the term is used in other provisions, such as:

327 IAC 2-1.3-6 (b)(15)(E) *Community* housing needs.

327 IAC 2-1.3-6 (b)(15)(G) The impact on the *community* tax base.

(Emphasis added). In these two sample provisions, “community” refers to the human population in the area in which the proposed activity will take place. To avoid confusion, these two provisions should be revised so that a term other than “community” is used. An appropriate substitute term would be “area in which the receiving waters are located.”

**E. (15) “Degradation”**

It is unclear why it is necessary to define this term as it concerns this rulemaking, because the balance of the Proposed Rule sets forth the antidegradation standards and implementation procedures that apply to all waters. Therefore, this term should be removed from the definition.

**F. (47) “RCRA”**

This definition identifies the federal statute by providing a code citation (42 U.S.C. 6901 to 6992k) and amendment date (October 19, 1996). RCRA was not amended on October 19, 1996; it was amended on March 23, 1996. The Proposed Rule should be updated to reflect the correct date and any more recent amendments.

**G. (57) “Threatened or endangered species”**

This definition includes species listed pursuant to the federal Endangered Species Act, as well as the following Indiana listings:

(B) Species listed as state threatened or endangered by the Indiana department of natural resources under IC 14-22-34;

(C) Species designated as state threatened or endangered species in the January 22, 1997, database for endangered, threatened, rare and special concern species maintained by the Indiana natural heritage data center, division of nature preserves, department of natural resources.

The antidegradation rule should not contain any special provisions concerning federal or state threatened or endangered species. Such treatment is unnecessary and inappropriate, because protection of threatened and endangered species already is taken into consideration in the adoption of water quality criteria and in permitting actions. Therefore, the definition of threatened and endangered species should be deleted.

In addition, only the federal listings have been properly adopted after notice and comment. Species that are listed only on an informal or internal agency list, such as the database

maintained by the Indiana Natural Heritage Data Center, have not been subjected to the full array of public participation procedures, which is necessary before they can serve as the basis for enforceable permit requirements.

**H. (58) “Tier I criteria”**

This definition references the procedures in 327 IAC 2-1-8.2 for waters outside of the Great Lakes system. However, Method 3 in that rule provision is actually a Tier II value equivalent method. Thus, the definition should be revised to make clear that it only applies to Methods 1 and 2 in 327 IAC 2-1-8.2.

**I. (59) “Tier II values”**

As is explained in detail later in these comments, antidegradation requirements should not be applied to Tier II values. Thus, this definition should be deleted.

**J. (71) “Whole effluent toxicity”**

This definition provides that “whole effluent toxicity” means the “aggregate toxic effect of an effluent measured directly by a toxicity test.” This definition should be clearly linked to toxicity test methods in the 40 C.F.R. Part 136 methodologies, so that the definition is not so broad as to include toxicity tests that are more specific to the testing of pure chemicals in support of assessing generational impacts. Only the 40 C.F.R. Part 136 methodologies generate data that properly may be interpreted in the context of a wastewater discharge and receiving water ecosystem. The definition should be revised as follows:

“Whole effluent toxicity” means the aggregate toxic effect of an effluent measured directly by a toxicity test performed in accordance with approved methodologies under 40 C.F.R. Part 136.

**IV. 327 IAC 2-1.3-3: ANTIDEGRADATION STANDARDS**

**A. The Exemption For CWA § 316(a) Alternative Thermal Effluent Limits Should Be Applied To All Waters.**

The provision in Proposed Rule 327 IAC 2-1.3-3(e) concerning alternative thermal effluent limitations pursuant to CWA § 316(a) should be applied to all waters. Currently, the provision states that it specifically does not apply to ONRWs. There is no reason for limiting this provision to waters other than ONRWs. This provision is based upon the federal antidegradation regulation in 40 C.F.R. § 131.12(a)(4), which is not limited in application to waters that are not specially designated waters. Currently, there are no ONRWs in Indiana, which is a further reason to delete this exclusion.

It is unclear how IDEM would implement antidegradation review in cases in which it decides to provide alternative effluent limitations. CWA § 316(a) allows permitting authorities to issue alternative thermal effluent limitations upon a demonstration that such limitations will “assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on that body of water.” This process results in thermal limits that are based on an evaluation of the aquatic life designated use, rather than limits based upon the numeric criteria for temperature. Therefore, the antidegradation implementation procedures set forth in the Proposed Rule would not be applicable to alternative effluent limitations. The Proposed Rule provision should be revised so that it applies to all waters.

In addition, the response to comments contained in the second notice indicates that the process for granting CWA § 316(a) variances does not satisfy antidegradation requirements. This is inconsistent with the Proposed Rule at 327 IAC 2-1.3-3(e), and should be revised.

**B. Parties Who Have Received A CWA § 316(a) Variance Should Not Be Required To Undergo Antidegradation Review.**

In addition, the Proposed Rule should be revised to provide that antidegradation review is not required for agency-approved variances. All variance applications must include a review of both the types of technology capable of treating the pollutant of concern and the social and economic costs of installing and operating each type of technology. This review is very similar to the technology review and demonstration of social or economic importance that is required for antidegradation review.

In fact, the United States Environmental Protection Agency (“U.S. EPA”) recommends that States use the same process for reviewing social and economic impacts for variances and antidegradation review. *See* Interim Economic Guidance for Water Quality Standards Workbook, EPA 823/B-95-002 (March 1, 1995). Thus, if IDEM has granted a variance to a discharger, it makes sense that the discharger should not also need to complete an antidegradation demonstration. A CWA § 316(a) demonstration affirmatively satisfies antidegradation requirements; thus, no additional review beyond the demonstration that the party already has obtained the variance should be required.

**V. 327 IAC 2-1.3-4: EXEMPTIONS FROM THE ANTIDEGRADATION DEMONSTRATION REQUIREMENTS**

**A. General Support For Exemptions From the Antidegradation Requirements.**

As part of the Proposed Rule, IDEM has specified that certain types of discharges are exempt from antidegradation demonstration requirements. We support the inclusion of these provisions, which will help ensure that the anti-degradation process stays focused on significant

actions and does not discourage worthwhile projects. However, we believe that the exemption provisions should be refined.

**B. Support For De Minimis Exemptions.**

NPDES permits are not issued unless the proposed discharge is treated with appropriate technology and complies with water quality standards. However, the Proposed Rule goes beyond assuring that the discharges are safe – by requiring review of changes in water quality that may result from increased or new discharges, even though those changes would not cause any violation of water quality standards.

Antidegradation review imposes significant additional costs on the regulated community and ultimately on their customers. Those costs are principally the additional time and expense involved in complying with the antidegradation requirements. Where the effect of a new or increased discharge on the environment is insignificant (*i.e.*, is less than the de minimis threshold), there is no benefit to requiring this commitment of time and money by the public, the regulated community, and government agencies. Requiring extensive review of insignificant or inconsequential discharges that clearly will remain below the water quality standards is punitive to industry without offering any meaningful added protection to human health or the environment.

Senate Enrolled Act 431 (2000) (“SEA 431”) requires the Board to adopt a rule for outstanding state resource waters (“OSRWs”) that includes a de minimis quantity of additional pollutant load for which a new or increased permit limit is required and below which antidegradation procedures do not apply. This de minimis concept should be extended to all high quality waters.

SEA 431 addressed, among other things, antidegradation implementation procedures for OSRWs. In particular, it amended IC 13-18-3-2 to require the Board to adopt antidegradation implementation procedures that include the following:

- (l)...(1) A definition of significant lowering of water quality that includes a de minimis quantity of additional pollutant load;
- (A) for which a new or increased permit is required; and
- (B) below which antidegradation implementation procedures do not apply.

*See* SEA 431, § 17, codified at IC 13-18-3-2-(l)(1).

This language unambiguously requires a de minimis level for OSRWs. This de minimis level is triggered when a discharger needs a new or increased permit limit. If the new or



increased discharge is below the de minimis level, the antidegradation implementation procedures do not apply to the discharge. Although the provisions of SEA 431 do not expressly apply to high quality waters that are not designated as OSRWs, it only makes sense to extend the de minimis concept in SEA 431 to all high quality waters. Otherwise, the antidegradation implementation procedures for regular high quality waters would be more stringent than the requirements for OSRWs.

U.S. EPA's final water quality guidance for the Great Lakes system provided antidegradation implementation procedures for bioaccumulative chemicals of concern ("BCCs") only. These procedures do not include a de minimis level. However, in the Supplementary Information Document ("SID") for the Great Lakes rules, U.S. EPA specifically stated that "[f]or non-BCCs, States and Tribes may include de minimis provisions in their antidegradation policy....De minimis provisions provide a means for States and Tribes to differentiate between actions that will likely result in an increased loading of a pollutant to a receiving water that is likely to have a significant impact on water quality and those that are unlikely to do so and focus review efforts on actions that will degrade water quality. It is reasonable to assume the loading increases of non-BCCs that will use less than ten percent of the remaining assimilative capacity in a water body will have a negligible effect on ambient water quality." *See* SID at 208.

In addition, in an August 10, 1995 U.S. EPA Memorandum entitled, "Tier 2 Antidegradation Reviews and Significance Thresholds" ("1995 Memorandum"), U.S. EPA recognized that it has afforded the states and tribes some discretion in determining what constitutes a significant lowering of water quality, and has accepted a range of approaches to defining a "significance threshold" over which full antidegradation review is required:

This issue was considered at great length in the process of developing the Water Quality Guidance for the Great Lakes. Relying upon input offered during a four-year open public process involving environmental groups, industry representatives, and other experts, with numerous opportunities for public input, the directors of the Great Lakes states and EPA technical experts reached consensus on a significance threshold of ten percent (10%) of the available assimilative capacity, coupled with a cumulative cap. They determined that this threshold represented a reasonable balance between the need of the regulatory agencies to limit the number of actions involving non-BCCs (bioaccumulative chemicals of concern) that are subject to the detailed antidegradation demonstration requirements, and the need to protect and maintain water quality. They believed that any individual decision to lower water quality for non-BCCs that is limited to 10 percent of the available assimilative capacity represents minimal risk to the receiving water and is fully consistent with the objectives and goals of the Clean Water Act. A ten percent (10%) value is well within the range of values for significance thresholds that EPA has approved in other states as well. EPA considers this approach to

be workable and protective in identifying those significant lowerings of water quality that should receive full tier 2 antidegradation review...."

See 1995 Memorandum at 2.

IDEM's current antidegradation implementation procedures for high quality waters in the Great Lakes system provide a de minimis of ten percent of unused loading capacity, as long as at least ten percent (10%) of total loading capacity remains unused. See 327 IAC 5-2-11.3(b)(1)(B)(ii)(AA). Other states provide a similar de minimis exemption:

Ohio: "any net increase in the discharge of a regulated pollutant that is less than ten percent of the wasteload allocation to maintain water quality standards calculated using total maximum daily load procedures, provided that proposed lowering of water quality does not exceed eighty percent of the wasteload allocation...." This provision does not apply to BCCs in the Great Lakes system. Ohio Administrative Rule 3745-1-05(D)(1)(b)(i).

Michigan: "[i]ncreased loadings of a pollutant which do not involve a BCC and which use less than 10% of the unused loading capacity that exists at the time of the request." Michigan Rule 323.1098(9)(c).

Kentucky: "permit renewals and modifications that result in less than a twenty (20) percent increase in pollutant loading from the previously permitted pollutant loading [are exempt from implementation procedures for high quality waters]." 401 KAR 5:030(2)(b)(1)(e).

Wisconsin: "expected levels in the receiving water of the indicator parameters as a result of the proposed new or increased discharge" do not exceed "[t]he assimilative capacity multiplied by one-third for all indicator parameters except dissolved oxygen; or [t]he sum of the existing level multiplied by one-third for dissolved oxygen." Wisconsin Administrative Code NR 207.05(2)(d).

Colorado: For BCCs, "less than 10 percent of the existing total load to that portion of the segment impacted by the discharge for critical constituents; provided, [sic] that the cumulative impact of increased loadings from all sources shall not exceed 10 percent of the baseline total load established for the portion of the segment impacted by the discharge...." For non-BCCs, "less than 15 percent of the baseline available increment, provided that the cumulative increase in concentration from all sources shall not exceed 15 percent of the baseline available increment...." Colorado Administrative Regulation 31.8(3)(c)(i) and (ii).

Based on U.S. EPA guidance and other state regulations, we recommend that IDEM allow de minimis increases of less than ten percent of total loading capacity to both high quality waters and OSRWs.

C. **Specific Comments on the Proposed Rule's DeMinimis/Cumulative Cap Provisions.**

The Proposed Rule includes de minimis/cumulative cap provisions for high quality waters that are significantly different from the current provisions in the implementation procedures for the Great Lakes system, 327 IAC 5-2-11.3 ("current rule"). The current rule defines the de minimis/cumulative cap based upon unused loading capacity and total loading capacity.

Specifically, if as a result of a deliberate activity, a discharger requests a new permit limit or modified permit limit, and the increased limit (as mass) is less than 10 percent of the unused loading capacity and at least 10 percent of the total loading capacity ("TLC") remains unused after the increase, then the increase is considered a de minimis lowering of water quality. Thus, the activity and modified or new permit limit is not subject to the antidegradation demonstration requirements.

The current rule establishes a clear threshold based on the capacity that, cumulatively, ever could be allocated to effluent mass increases as 10 percent of TLC has to remain unused. That is, as multiple requests or multiple dischargers request small increases to discharge limits, the cumulative cap is:

$$90\% \text{ TLC} - \text{Background Level} = \text{Cumulative Effluent Cap}$$

As the TLC is based upon water quality criterion and the applicable stream design flow, the mass to remain unused is constant unless effluent load or background load changes dramatically.

In contrast to the current rule, the Proposed Rule defines the de minimis/cumulative cap based on only unused loading capacity. As in the current rule, for high quality waters the de minimis increase to a limit (or to a new limit) has to be less than or equal to 10 percent of the existing unused loading capacity, determined at the time of the specific proposed new or increased loading of the pollutant of concern.

The cumulative cap provision in the Proposed Rule is different than the one in the current rule. The current rule provides that at least 10 percent of the total loading capacity must remain unused; the Proposed Rule states that at least 75 percent of the unused loading capacity must remain unused. See Proposed Rule at 327 IAC 2-1.3-4(b)(1)(A)(i)(DD). OSRWs have similar issues, but a more stringent cumulative cap of 97.5 percent. See Proposed Rule at 327 IAC 2-1.3-4(b)(1)(B)(i)(DD).

IDEM indicated that it intended to substantially reduce the cumulative cap for high quality waters, based on the opinion in *Ohio Valley Environmental Coalition v. Horinko*, 279 F. Supp. 2d 732 (S.D. W.Va. Huntington Division 2003). That case concerned U.S. EPA's

approval of West Virginia's antidegradation rules. As it concerns de minimis/cumulative cap, the court determined that the administrative record supported U.S. EPA's approval of West Virginia's de minimis provision; however, the administrative record did not support U.S. EPA's approval of West Virginia's cumulative cap.

It should be noted that *Horinko* only is binding upon U.S. EPA as it concerns its review and approval of West Virginia's antidegradation rules. Furthermore, the court did not prohibit U.S. EPA from approving state rules that allow a de minimis lowering without an antidegradation demonstration. Rather, the court simply determined that U.S. EPA did not adequately justify its decision to approve West Virginia's approach concerning the cumulative cap. The additional observations the court made concerning the size of the cumulative cap were dicta – remarks that are irrelevant to the court's actual holding in the case. Thus, it is inappropriate to take those remarks out of context, especially to the extent of using them as the basis for making a significant change to the de minimis/cumulative cap provisions that currently apply to high quality waters.

In addition, the courts also have recognized that U.S. EPA has afforded the states and tribes some discretion in determining what constitutes a significant lowering of water quality. U.S. EPA has accepted a range of approaches to defining a "significance threshold" over which a full antidegradation review is required. This issue was considered at length in the process of developing the Water Quality Guidance for the Great Lakes. Relying on input offered during a four-year open public process involving environmental groups, industry representatives, and other experts, with numerous opportunities for public input, the directors of the eight Great Lakes states and U.S. EPA technical experts reached a consensus on a significance threshold value of ten percent (10%) of the available assimilative capacity, coupled with a cumulative cap. A ten percent (10%) value is within the range of values for significance thresholds that U.S. EPA has approved in other states. *See Kentucky Waterways Alliance v. Johnson*, No. 06-5614 (6<sup>th</sup> Cir. 2008) (holding that the 10 percent de minimis value in Kentucky's antidegradation regulations was acceptable).

IDEM has not presented data or information to show that the current de minimis/cumulative cap provisions are not satisfactory for managing antidegradation standard requirements with respect to minor increases to permit limits. In fact, the application of the cumulative cap and the definition of that cap in the current rule is appropriate and justifiable.

The de minimis allowance of 10 percent of unused loading capacity should be established as the default allowance, and the Proposed Rule should clarify that simple loading capacity calculations will be sufficient to demonstrate that a discharger qualifies under the de minimis provisions.

In addition, we recommend that the Proposed Rule also provide for the ability to establish an alternative de minimis threshold (similar to the Indiana rule providing a default mixing zone, but also allowing dischargers to seek alternate mixing zones). An alternative de minimis threshold would be appropriate under several circumstances in which it can be shown that a different value or method of determination would still result in a de minimis lowering. The following analyses and studies are examples of techniques to develop an alternative de minimis threshold in lieu of the default 10 percent de minimis value:

1. Correlation of the proposed increased effluent load to instream concentration response relative to water quality criteria. This involves determining how a de minimis increase would impact receiving stream water quality as measured by a relative change to the water quality criteria. The correlation would show how a small change in water quality criteria (originally designed to protect 95 percent of aquatic life) would still conservatively protect the indigenous organisms.
2. Incorporation of the non-conservative fate of a constituent of concern. For example, the nitrogen series decay can be integrated into a de minimis assessment for ammonia. A de minimis loading of greater than 10 percent may be kinetically reduced to less than 10 percent within the antidegradation segment of the receiving water.
3. Use of alternative receiving water design flows for effluent dominated waters. If the de minimis loading is discharged to a zero flow receiving water (i.e.,  $7Q_{10} = 0$ ), then an alternative flow must be generated to determine the initial total loading capacity and subsequent remaining unused loading capacity. This alternative flow may be of the form of an upper level statistic (99th percentile, etc.) of the effluent flow itself or other representative flow during average receiving water flow conditions (either continuous or intermittent). Wet weather conditions and corresponding receiving water flow may also be analyzed.
4. Use of an alternative statistic for background concentration. Based on instream monitoring data, a background concentration statistic other than average/mean/median may be more appropriate considering the frequency of detection and the magnitude of detection relative to water quality criteria.

The Proposed Rule should provide a cumulative cap of 10 percent of the total loading capacity, consistent with the current rule. The following information can be used to demonstrate that this cumulative cap is consistent with a de minimis allowance. Several conservative assumptions already are applied to the determination of the cumulative de minimis cap of 10 percent of the total loading capacity that must remain unused. These assumptions include:

3. Use of alternative receiving water design flows for effluent dominated waters. If the de minimis loading is discharged to a zero flow receiving water (i.e.,  $7Q_{10} = 0$ ), then an alternative flow must be generated to determine the initial total loading capacity and subsequent remaining unused loading capacity. This alternative flow may be of the form of an upper level statistic (99th percentile, etc.) of the effluent flow itself or other representative flow during average receiving water flow conditions (either continuous or intermittent). Wet weather conditions and corresponding receiving water flow may also be analyzed.
4. Use of an alternative statistic for background concentration. Based on instream monitoring data, a background concentration statistic other than average/mean/median may be more appropriate considering the frequency of detection and the magnitude of detection relative to water quality criteria.

The Proposed Rule should provide a cumulative cap of 10 percent of the total loading capacity, consistent with the current rule. The following information can be used to demonstrate that this cumulative cap is consistent with a de minimis allowance. Several conservative assumptions already are applied to the determination of the cumulative de minimis cap of 10 percent of the total loading capacity that must remain unused. These assumptions include:

1. Use of chronic water quality criteria to calculate the total loading capacity.
2. Use of low flow (i.e.,  $7Q_{10}$ ) for receiving water when calculating total loading capacity.
3. Use of a maximum permit limit for current effluent loading, if available.
4. Use of a maximum monthly average flow to calculate current effluent load, if the discharge does not have a permit limit.
5. Conservative nature of effluent for all constituents.

These assumptions are cumulative, that is, they are applied simultaneously. Therefore, the probability of impact due to a de minimis increase is reduced geometrically (multiplication) as the assumptions “overlap.”

For example, the cumulative cap of 10 percent total loading capacity remaining unused can be interpreted as allowing cumulative de minimis effluent loading increases up to 90 percent of the total loading minus the background load. Under assumption #2 above, if the ratio of the median receiving water flow to the corresponding  $7Q_{10}$  flow is 7:1 (typical for variety of Indiana receiving waters as indicated from USGS gauging station data), the de minimis loading increase on an average basis approximates as  $90\% / 7 = 13\%$ . Applying assumption #4

simultaneously, if the ratio of the average effluent flow to maximum monthly average flow is 2:1 (arbitrary), then the de minimis loading increase on an average basis would further reduce to  $13\% \div 2 = 7\%$ . Additional assumptions above would further reduce the de minimis loading based on average, typical conditions. This example illustrates the general nature (not particular calculation techniques) of cumulative conservative assumptions for the current de minimis loading cap, further supporting the retention of the cap in the proposed antidegradation rules.

The de minimis/cumulative cap provisions for OSRWs are far more stringent than the corresponding provisions for high quality waters. Such more stringent provisions do not comply with the requirements of SEA 431, which provide that OSRWs are subject to the same antidegradation requirements as high quality waters, plus an additional overall improvement requirement. IC 13-18-3-2(l) provides in relevant part:

For a water body designated as an outstanding state resource water, the board shall provide by rule procedures that will ...

(2) allow for increases and additions in pollutant loadings from an existing or new discharge if:

(A) there will be an overall improvement in water quality for the outstanding state resource water as described in this section; and

(B) the applicable requirements of 327 IAC 2-1-2(1) and 327 IAC 2-1-2(2) and 327 IAC 2-1.5-4(a) and 327 2-1.5-4(b) are met.

The 327 IAC sections referenced in this provision are the antidegradation requirements for all waters (Tier 1) and high quality waters (Tier 2). Application of this provision clearly requires that the OSRW antidegradation requirements, including specification of de minimis/cumulative cap provisions, should be the same as those for high quality waters. Therefore, the Proposed Rule should be revised so that the de minimis/cumulative cap provisions recommended in our previous comments on high quality waters also apply to OSRWs.

There is no technical or scientific basis for the requirement that the proposed net increase in the loading of a pollutant of concern is less than or equal to one percent (1%) of the existing unused loading capacity determined at the time of the specific proposed new or increased loading of the pollutant of concern. Similarly, there is no technical or scientific basis for the benchmark unused loading capacity figure of 97.5 percent -- the amount of unused loading capacity that must remain after new/increased discharges are allowed. See Proposed Rule § 2-1.3-4(b)(1)(B)(i)(CC). Based on the conservative nature of the assumptions underlying current antidegradation requirements, a ten percent de minimis level and ensuring that ten percent of

loading capacity remains after all increases are considered should be sufficient to protect both high quality waters and OSRWs. EPA agreed when it adopted the Great Lakes Initiative, which applied to all high quality waters, including the Great Lakes themselves. In addition, the only rationale provided by IDEM appears to be an analogy to Clean Air Act (“CAA”) increments for Prevention of Significant Deterioration (“PSD”). However, there is no relationship between different PSD areas and waterbodies designated as high quality or OSRW, and no indication that what may be a sound scientific basis for CAA emission rules can be transferred without further analysis to wastewater discharges. IDEM should continue applying the de minimis and cumulative cap levels that EPA approved for all high quality waters, including OSRWs.

**D. Antidegradation Review Should Not Be Required For WET and pH.**

Proposed Rule § 2-1.3-4 sets forth procedures for determining whether a new or increased loading of a pollutant of concern is exempt from the antidegradation demonstration requirements. However, the Proposed Rule contains no appropriate provisions regarding WET and pH. WET and pH are non-conservative parameters, for which it is simply not feasible to construct procedures for anti-degradation review (for example, mass loading cannot be calculated for WET and pH). Therefore, the water quality criteria are the only valid reference point to use in assessing water impacts with respect to these parameters. The Proposed Rule should clearly provide that WET and pH shall not be subject to antidegradation review.

**E. Antidegradation Review Should Not Be Required For TRC.**

Similarly, total residual chlorine (“TRC”) should not be subject to antidegradation review, but the Proposed Rule does not contain any appropriate provision regarding TRC. IDEM imposes effluent limitations for dischargers that use chlorine for disinfection or zebra mussel control. The concentration of water quality based effluent limits (“WQBELs”) are below the level of quantification and often below the level of detection. Therefore, it is not possible to determine mass loading for TRC in a discharge. Moreover, TRC dissipates quickly, and the background concentration in the receiving water will always be zero. Thus, there is no loading capacity, either unused or total. As a result, it is not possible or necessary to construct antidegradation review procedures for TRC. The Proposed Rule should provide that TRC shall not be subject to antidegradation review.

**F. Determining Total Loading Capacity When There is No Numeric Water Quality Standard.**

The Proposed Rule does not address how to determine total loading capacity in cases where there is (1) a narrative water quality standard but no corresponding numeric water quality criteria; and (2) an existing or proposed limit derived from either technology-based effluent



limits (i.e., BAT, BPT, etc.) or Best Professional Judgment (i.e., historical performance, etc.). Many conventional pollutants such as BOD, COD and TSS apply these two scenarios in permits and the methods described in 327 IAC 2-1.3-4(b)(1)(A)(i)(BB) and (CC) to generate water quality criteria are not appropriate for these surrogate parameters where toxicity response information cannot be created. This is a similar problem for high quality waters that are also OSRWs, as described in 327 IAC 2-1.3-4(b)(1)(B)(i)(BB) and (CC).

IDEM should clarify the Proposed Rule to provide specific requirements for these types of situations or, more appropriately, state that the permittee would be exempt from antidegradation review and would not have to make an antidegradation demonstration for those parameters that do not have corresponding numeric water quality criteria at the time of the request for increase. Alternatively, IDEM could include a procedure that a permittee could follow to make a showing that there will be no significant impact (i.e., de minimis lowering of water quality) to a receiving water where there is no numeric standard.

**G. Antidegradation Requirements Should Not Be Applied To Tier II Values; Alternatively, A Qualitative Trigger Should Be Used For Substances With Tier II Values For Purposes Of Requiring An Antidegradation Review.**

The Proposed Rule extends its application to parameters for which a Tier II value can be calculated. We are very concerned about this treatment of Tier II values. Under the rules that apply to dischargers in the Great Lakes system, IDEM may develop a Tier II value based on as little as one test of water fleas (*daphnids*) and application of extremely large “uncertainty factors.” These values will change over time – as more data is developed, IDEM will reevaluate its database, and also apply smaller uncertainty factors to take into account the greater amount of data. Thus, different dischargers, whose permits are reviewed at different times, will likely be faced with different Tier II values for the same exact substance.

In this circumstance, the antidegradation trigger level for the first discharger could be much smaller than for subsequent facilities, and the first discharger may have to go through antidegradation review while other, later dischargers will not be subject to those requirements, even though they are all discharging the same substance at the exact same level. This is an arbitrary, unfair system that bears no rational relationship to the actual environmental impact of facility activities.

Therefore, we believe that the antidegradation review process should not apply to substances that have Tier II values. At a minimum, IDEM should not apply numeric trigger levels. Instead, there should be a qualitative test, such as “significant impact on water quality.” That would allow IDEM to assess the likely effect of the substance, without the result depending

solely on when the discharger has submitted its application and which uncertainty factor is currently appropriate for use in a Tier II value.

A qualitative trigger level would be especially appropriate for use in assessing whether to apply antidegradation review to major cations and anions, such as calcium, sodium, potassium, magnesium, manganese, carbonate, bicarbonate, phosphate and sulfate. Under previous versions of the Proposed Rules, these substances were subject to the Tier II value process. As a result, IDEM will derive very stringent Tier II values for the cations and anions, and when a discharger submits a request to increase its discharge of one of those materials, it will be very likely to trigger antidegradation review, because the trigger levels for review will be very small. However, this process does not consider the fact that evaluating toxicity of these substances is a complex matter. There are substantial differences in toxicity among the major ions (some ions present very little toxicity), and there will be differing responses of aquatic organisms depending on the ionic composition of waters. When evaluating the toxicity of a major ion, one must consider the toxicity effects of the opposing ion as well as the ionic balance of the solution. Application of strict numeric trigger levels in antidegradation review does not allow for evaluation of any of those factors. Therefore, if the cations and anions are to be subject to antidegradation review, the trigger level should be qualitative, such as "significant impact on water quality," so the appropriate factors can be considered.

#### **H. Concentration Limits Are Not Appropriate In All Situations.**

If IDEM imposes both a mass limit and a concentration limit, this provision should not be imposed outside the Great Lakes Basin. This provision was taken from the State's GLI rules. The State's GLI rules do not impose this rule outside the Great Lakes Basin. It is a significant change from the current rules, and IDEM has provided no reason why the current rules are inadequate.

If, despite the above comment, IDEM retains the mass/concentration requirement, then it at least needs to provide exemptions for situations in which application of this requirement would be either environmentally counterproductive or unnecessary. For instance, concentration limits can act as a disincentive to water conservation practices. Water conservation methods will often increase the concentration of a pollutant in a discharge, even when the total mass of the pollutant is decreased. Therefore, the requirement for a mass limit should not be applied in cases where it would discourage or prevent water conservation practices.

There are other situations in which application of both mass and concentration limits would clearly be unnecessary to protect water quality. For example, if the amount of the facility's effluent flow is very small in relation to the stream flow, then compliance with a mass

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There are other situations in which application of both mass and concentration limits would clearly be unnecessary to protect water quality. For example, if the amount of the facility's effluent flow is very small in relation to the stream flow, then compliance with a mass limit should ensure that the waterbody would not be impaired on a concentration basis. Therefore, IDEM should not be required to apply a concentration limit in that case.

## **CONCLUSION**

We have many significant concerns with the Proposed Rule. We believe that these concerns must be addressed before the rulemaking moves forward, and that incorporation of our suggested changes will result in an antidegradation rule that is workable and appropriate to protect the quality of Indiana's waters and meet all federal requirements for antidegradation review.

We appreciate the opportunity to comment on the Proposed Rule. If you have any questions concerning these comments, please feel free to contact me.

Very truly yours,

A handwritten signature in black ink, appearing to read "Fredric P. Andes". The signature is fluid and cursive, with a large initial "F" and "A".

Fredric P. Andes

EPA/mr  
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